ABSTRACT OF THE DISCLOSURE

A mesh network for routing a plurality of data segments therethrough, each of the data segments containing address information. The network includes: a first, second, and third switch element each having a respective external input for routing data segments into the network and a respective external output for routing data segments out of the network; a bi-directional coupling between each of the switch elements; and a first controller for interrogating the address information of each of the data segments inbound into the first switch element. The exit pathway for any inbound data segment received by a switch element is selected according to the address information of that data segment, and if a contention exists for the exit pathway, further according to a priority designator of that data segment. The first external output, if free and if the first switch element is the outbound destination for that data segment, will be selected as the exit pathway, otherwise one of said bi-directional couplings in communication with the first switch element will be selected as the exit pathway. Also, an associated method and computer executable program code on a computer readable storage medium for routing a plurality of data segments through a mesh network.